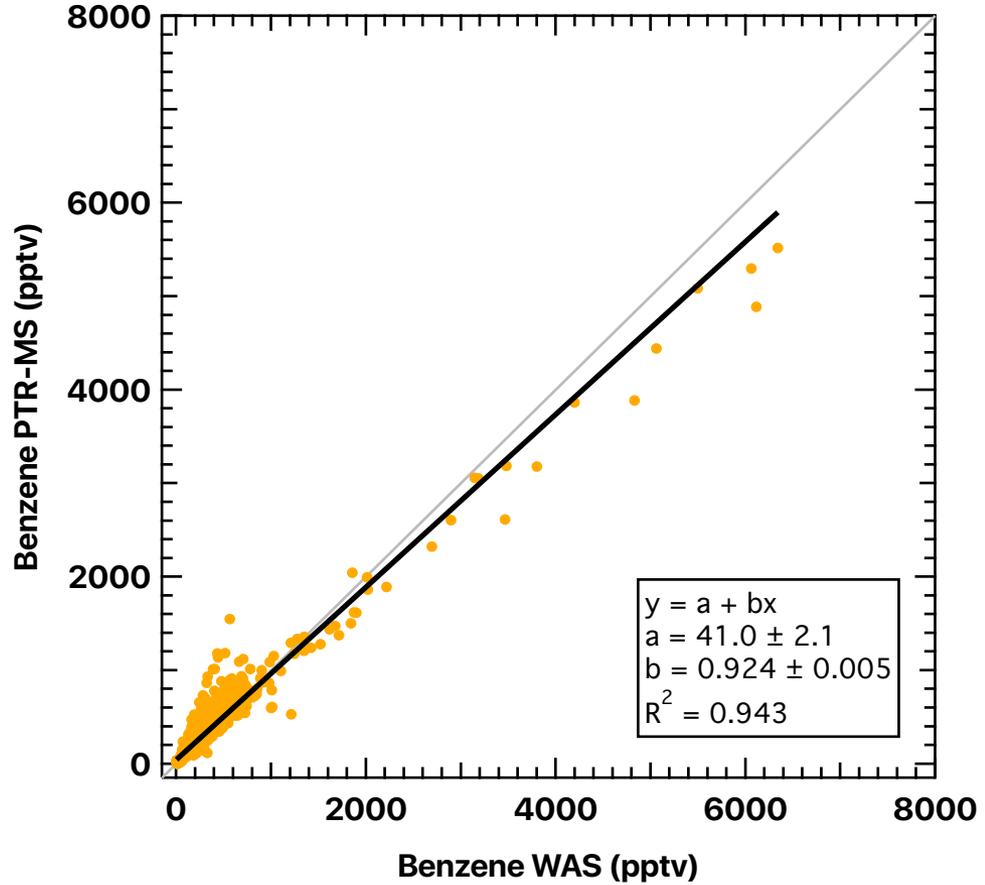


Benzene – U. of Oslo PTR-MS vs UCI WAS

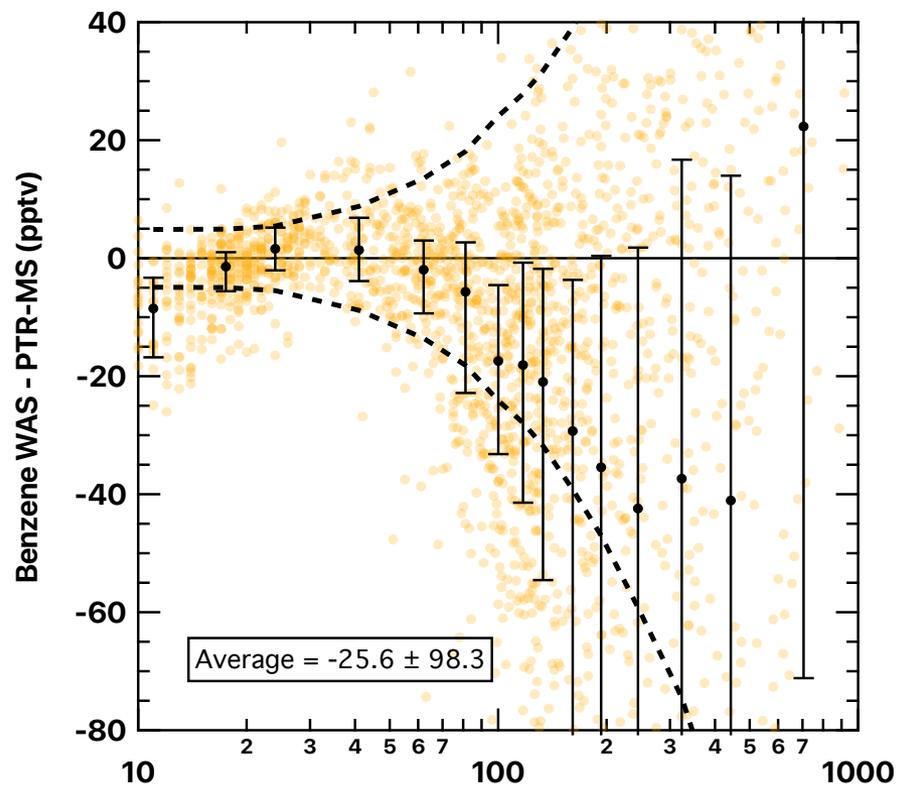


Difference dependence on benzene value

Uncertainty envelopes based on WAS time interval data uncertainty

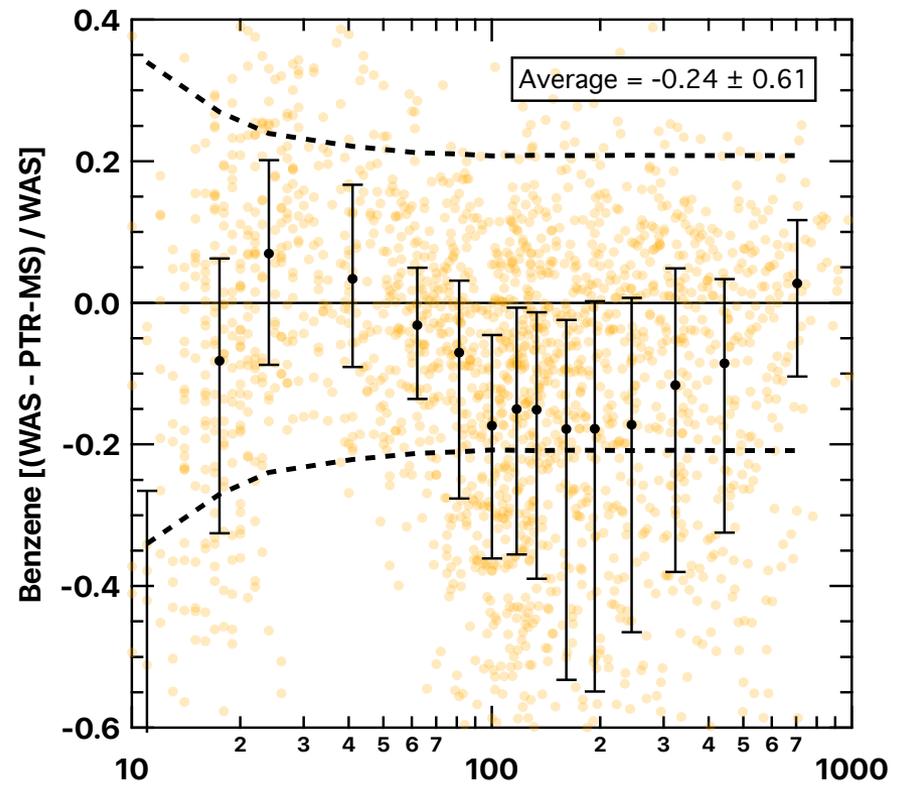
(WAS = \pm (3% or 3 pptv + 5%), PTR-MS calculated from data file precision + 20% accuracy)

Absolute Difference



Benzene WAS (pptv)

Relative Difference



Benzene WAS (pptv)

75th Percentile
● Median
25th Percentile

Data:

- WAS Merge: korusaq-mrgWAS-dc8_merge_20160426_R6_thru20160618.ict (only data from flights 20160501-20160609 used in analysis – non-transit flights)

Correlation:

- Fit lines are derived from orthogonal distance regressions.
- R^2 values are calculated independently, not from orthogonal distance regression.

Uncertainty propagation (Uncertainties provided by PIs).

- WAS uncertainty: \pm (3% or 3 pptv + 5%), precision and accuracy combined using quadrature sum.
- PTR-MS 1s uncertainty: precision reported in data file + 20% accuracy. PTR-MS precision propagated to average median WAS time interval (180s), precision and accuracy combined using quadrature sum.

Difference dependence on Benzene value:

- Relative Difference calculated by $[WAS - PTR-MS] / WAS$.
- Median, 25th, and 75th percentiles based on 150 data point bins after data is sorted by WAS values.